CHANGES IN PUBLIC REACTION TO A NEW EPIDEMIC: THE CASE OF AIDS*

RAYMOND FINK, PH.D.
Professor
Department of Community and Preventive Medicine
New York Medical College
Valhalla, New York

THE international tragedy that is the AIDS epidemic has provided an opportunity not hitherto available to observe public reaction to a medical phenomenon. While other diseases have surfaced in recent years, such as Legionnaires' Disease, none has received the prolonged and intensive public attention of the AIDS epidemic. The reasons are obvious. AIDS is a lethal disease of dramatically increasing incidence for large numbers of people in the United States and elsewhere. We are in an epidemic that shows few signs of abating and that we will not be able to look back on for some time.

While we may now know the virus entity, or entities, which cause AIDS and much about the methods of transmission, significant areas of knowledge remain unknown. We know that transmission of the AIDS virus is through body fluids and that this may occur through sexual contact, infected needles, blood transfusions, and across the placenta to the child of an infected mother. Thus, the scientific community knows many of the conditions which may contribute to primary prevention of the disease. What remains unknown are other primary prevention methods of immunization, and there is, of course, no known cure. Only recently, with the release of azothymidine for nonexperimental use, have we had available even a method to delay inevitable death from AIDS.

Thus, the AIDS epidemic remains a major public health issue with continuing mortality and with dramatic new events and controversies. These continuing and new events are rapidly communicated to the general public through newspapers, television, radio, and other forms of mass communication which may create changes in public knowledge, attitudes, and perhaps even personal practices with regard to AIDS. In addition, public response to the AIDS epidemic has become news in itself, and the same mass

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communicators have also given considerable effort to examining public reactions to the epidemic.

This report describes the results of public opinion and attitude surveys in the United States which included questions about AIDS. All of the findings are based on national survey samples of adults, starting in June 1983, when the Gallup Poll reported the first results, through March 1987. Many of the polls were conducted by research units of the three major television networks and by the Gallup and Roper Organizations.

A wide range of topics are included in these surveys, and this discussion is limited to the extent to which the public has heard about AIDS and their information and misinformation about the disease. Included also are reports of public concern about AIDS. Some information is provided on reports of changes in personal practices associated with the AIDS epidemic.

It is important to keep in mind that the surveys which generated these data do not come from organizations whose prime interests are in the study of public health. While all the studies may be methodologically sound, the subject matter and items used to cover these subjects are often selected for their news interest rather than for the use of public health officials. Thus, topics which a public health audience might regard as of prime interest may not be included. Nevertheless, the range of subject matter is both impressive and useful for these purposes.

Research Methods

Data in this report come from the Roper Public Opinion Library at the University of Massachusetts, which includes a collection of many of the national surveys of opinion and attitudes on a broad range of topics. On request, the Roper Center for Public Opinion Research provided data from 22 national surveys from June 1983 through March 1987, in which two or more questions were asked about AIDS.

Eighteen of the 22 surveys were conducted through telephone interviews in which households were sampled on the basis of random-digit dialing. This method of sampling is used extensively for both social and commercial research, and, within the known limitations of the method, is widely accepted as a reasonable basis for estimating the larger national population. Limitations include the presence of telephones in about 80 to 90% of homes, but the method does eliminate the problem of unlisted home telephones. Sample sizes generally range between 800 and 2,000 persons. Methodologic improvements in questionnaire techniques have resulted in little observable difference between telephone and personal interviews in the responses they

elicit. Most of the differences between the two techniques are likely attributable to sampling differences.

There is a curious pattern to the timing of the studies. The first was completed in June 1983 and two more in August 1983—then there were none until June 1985. Nine studies were completed during the last six months of 1985 and seven during all of 1986.

This distribution of national surveys highlights the news orientation of the studies, about two thirds of which are for television networks, news magazines, newspapers, or combinations of these. Although there is no effort in this report to link survey findings to specific public events associated with the AIDS epidemic, it is likely that specific events did in fact motivate researchers to select the topic. These events would include the deaths of such famous people as Rock Hudson or court cases involving the exclusion of children with AIDS from classrooms. To an extent, the surveys about AIDS have themselves been important news events.

Study Findings

In the summer of 1981 the Centers for Communicable Disease, on reviewing a number of deaths from rare diseases among homosexual men, recognized the presence of rare infections by *pneumocystis carinii* and Kaposi's sarcoma. In December 1982 the conditions were linked to severe immune deficiency and named Acquired Immunodeficiency Syndrome or AIDS. By summer 1983 about 2,000 people in the United States had died of AIDS, and 77% of those interviewed by the Gallup Organization had heard of the disease. Knowledge of the AIDS epidemic has spread with remarkable speed so that, by any survey measure used, nearly everyone in the United States has heard of it (Table I). On the basis of household interviews in June 1985, 95% of the population had heard of AIDS, and in a telephone survey in March 1986 98% had heard of the disease.

It is clear subjectively that there is a high prevalance of news stories about AIDS, and evidence of the extent to which they are read is found in a national telephone study conducted by the *Los Angeles Times* in September 1985. A cross section of adults were asked if they had read any news stories about AIDS during the past week—92% reported they had. Indeed, nearly half of the adult population studied reported having read five or more news stories about AIDS during the week preceding the interview. Clearly, AIDS not only receives a great deal of attention but information about it is widely read.
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TABLE I. EVER HEARD OR READ ABOUT AIDS?

	6/83* (P)‡	6/83** (T)‖	8/83† (P)	6/85* (P)	3/86* (T)
Yes	77%	81%	91%	95%	98%

*Gallup
**ABC/*Washington Post*
†Gallup/*Newsweek*
‡(P) Survey conducted using personal interviews
‖(T) Survey conducted using telephone interviews

TABLE II. WORRIED AIDS WILL READ GENERAL POPULATION?

	6/83* (P)†	9/85** (T)‡
Yes	38%	79%
How likely AIDS will reach general population?		
	8/85*	11/86†
Very likely	27%	36%
Somewhat likely	35%	37%

*Gallup
**ABC/*Washington Post*
†Gallup/*Newsweek*
‡(P) Survey conducted using personal interviews
‖(T) Survey conducted using telephone interviews

Concern with the spread of AIDS. Concern about the spread of AIDS has reached high levels, along with public cognizance of the disease. In June 1983, in a household interview sample, 38% reported that they worried that AIDS would reach the general population (Table II). At that time the epidemic appeared largely limited to the male homosexual population and, to a lesser extent, to drug addicts. Twenty-seven months later, in a telephone interview study, 79% reported this concern.

Other studies asked about the likelihood that AIDS would reach the general public, providing an additional dimension. In August 1985 27% thought that this was very likely, and an additional 35 percent thought it somewhat likely. Fourteen months later, in November 1986, the proportion of those with these concerns had increased to 36% who thought it very likely and 37% somewhat likely that AIDS would reach the general community.

Personal concerns about getting AIDS are at lower levels among the American population, but are nevertheless substantial (Table III). In November 1985 27% reported they were very concerned that they might get AIDS, and 37% were somewhat concerned. In January 1987 the proportion of very

TABLE III. PERSONAL CONCERNS ABOUT AIDS*

	How concerned you might get AIDS		
	11/85**	11/86†	1/87†
Very	27%	26%	34%
Somewhat	37%	35%	32%
	How worried someone you know might get AIDS		
	8/85‡	11/86‡	
Very	14%	19%	
A little	27%	25%	

*All surveys conducted using telephone interviews
**NBC News
†NBC News/*Wall Street Journal*
‡Gallup/*Newsweek*

concerned had increased to 34%, and those somewhat concerned had declined to 32%. There was a similar pattern of change in concern that "someone you know" might get AIDS. In August 1985 14% were very concerned about this, and this increased over a 14-month period to 19%. Those who were a little concerned about this remained at about the same level, about one in four during this time period.

Knowledge of AIDS transmission. There is substantial confirmed evidence of some of the processes of transmission of the AIDS virus, i.e., blood transfusions where blood is contaminated, sexual acts in which there is an exchange of body fluids, and through contaminated needles during illegal intravenous drug use. There is also substantial empiric evidence that the AIDS virus is not transmitted through casual contact, through contact with household items used by AIDS victims or other forms of nonsexual contact. The American public learned very quickly about the true forms of AIDS transmission. In August 1984, less than a year after AIDS was identified as a disease, about half the population correctly identified AIDS transmission with blood transfusions, three out of four identified AIDS with homosexual men, and more than 40% with the use of contaminated needles (Table IV). The proportion of those able to link AIDS transmission correctly with these three processes increased so that in August 1985 the proportions linking AIDS with blood transfusions and with contaminated needles doubled. There was also an increase to 80% in those identifying AIDS with homosexual men. By the fall of 1985 more than 90% identified AIDS with these three methods, although the question about homosexual men as a mode of transmission was replaced with a question about sexual contact in general.

Equally intriguing are public misperceptions about the transmission of

TABLE IV. HOW AIDS IS TRANSMITTED—CORRECT RESPONSE

	8/83* (P)†	6/85** (P)	9/85* (T)‡
Blood transfusions	50%	92%	95%
Homosexual men	75%	80%	
Sex-not specific			95%
Needles	42%	84%	92%

*ABC/*Washington Post*
**Gallup
†(P) Survey conducted using personal interviews
‡(T) Survey conducted using telephone interviews

AIDS. In August 1983 23% believed that AIDS could be transmitted while giving blood; in late 1985 and 1986 33% believed this (Table V). In September 1985 28% believed that AIDS is transmitted by using an infected person's drinking glass, and this increased to 38% in late 1985 and remained at this level in late 1986. In late 1985 sneezing was believed to transmit AIDS by 22% or 32% (depending on the survey used) and was at 32% in late 1986. During the period from September 1985 through November 1986 about 30% believed AIDS could be transmitted through the eating of food handled by a person with AIDS. In brief, dating from the earliest surveys until January 1987, there was no decline in the public's erroneous information about the transmission of AIDS. Indeed, there is evidence that as public awareness of AIDS increased so too did correct information and, perhaps too, some incorrect information about the transmission process of the disease.

Precautions to prevent AIDS. During the last four months of 1985 a number of surveys inquired how AIDS might be prevented. Only some of these data are presented here, and for two topics a range of data are presented because of different response patterns in different surveys. About a year later in November 1986 similar questions were asked in another survey. Comparisons are presented over time when available. As in the questions about the manner in which AIDS is transmitted, there are both appropriate and inappropriate responses, and both are presented here. In late 1985 between 13 and 17% reported that homosexuals should be avoided to prevent AIDS (Table VI). A year later this proportion was substantially the same, 18 percent. In late 1985 28% thought that one should avoid places where homosexuals might go, and this increased to 33% a year later. Of additional concern are the 21% in 1985 who thought to avoid AIDS by refusing surgery where blood transfusions are required; this increased to 27% a year later.

TABLE V. HOW AIDS IS TRANSMITTED—INCORRECT RESPONSE

	8/83* (P)‖	9/85** (T)§	11/85† (T)	12/85‡ (T)	11/86* (T)
Giving blood	23%			33%	33%
Using glass used by people who have AIDS		28%	33%	38%	38%
Sneezing	22%	32%	32%	32%	
Eating food handled by people who have AIDS	29%	31%	31%	31%	

*Gallup/*Newsweek*
**ABC News/*Washington Post*
†NBC News
‡*Los Angeles Times*
‖(P) Survey conducted using personal interviews
§(T) Survey conducted using telephone interviews

TABLE VI. PRECAUTIONS ONE MIGHT TAKE TO PREVENT AIDS

	Late 1985	11/86†
Avoid homosexuals	13-17%***	18%
Avoid places where homosexuals might go	28%*	33%
Refuse surgery requiring blood transfusions	21%*	27%
Reduce sexual activities: limit partners	11-17%**	58%
Take precautions at work	20%†	
Keep distance from strangers	11%**	
No drugs with needles	6%**	
Use condoms		32%

*Gallup/*Newsweek*
**Gallup
†ABC/*Washington Post*
‡NBC News

During this one year period of observation there was substantial increase in the proportion who agreed that a precaution against AIDS is to reduce sexual activity or to limit sexual partners. This increased from around 11 to 17% in late 1985, to 58% in late 1986. While the surveys conducted in 1985 did not inquire about the use of condoms to prevent AIDS, in 1986 about one third of those interviewed believed this to be one method.

Behavior change and AIDS. When asked if, in fact, they had changed personal sexual behavior because of the AIDS epidemic, in both January 1986 and January 1987 only 7% reported that they had done so (Table VII). When asked further in 1986 about the manner of change, among those who reported

TABLE VII. BEHAVIOR CHANGE AND AIDS*

Changed personal behavior because of AIDS epidemic:	1/86**	1/87**
Yes	7%	7%
Impact of epidemic on Lifestyle:	12/85†	
Large	5%	
Small	13%	

*All surveys conducted using telephone interviews
**NBC News/*Wall Street Journal*
†*Los Angeles Times*

any change nearly all replied that they had fewer sex partners or that they took greater care in the selection of sex partners. About half of those who reported changes in behavior reported increased use of condoms.

In January 1987 single, divorced, or separated people were asked what they were doing that was different during the AIDS epidemic. At this time nearly two thirds reported increased likelihood of using condoms. In this study a new element of behavior was introduced, and 34% of the unmarried reported that they would ask a new intended partner if he had been tested for AIDS.

Testing for AIDS for one's self and for others appears to be generally acceptable. In November 1986 nearly nine out of 10 people reported their willingness to be tested for AIDS. When asked in the same survey who should have their blood tested for AIDS, only 3% replied "no one", while nearly half of those interviewed thought that everyone should be tested. Thirty-one percent of the respondents thought that testing should be done among homosexuals, drug users, and other high risk groups. In addition, 18% believed that testing should be done among food handlers, teachers, and health workers, that is, people with whom they or their children might have contact and where risk is perceived, however incorrectly.

To the hypothetical question about willingness to take a vaccine that would prevent AIDS, in the fall of 1985 about half the respondents to two surveys reported their willingness to do so.

Discussion

There is little question that increasing mortality from AIDS combined with massive coverage by television, newspapers, radio, and other mass communication media has created among Americans a high sense of awareness of

the disease. Within six months of designation of the disease, its name was recognized by three out of four adults, and by now nearly everybody knows about it. Our particular interest here is what the public knows about AIDS and its attitudinal and behavioral response.

A substantial segment of the population is concerned about the potential spread of the disease to the population generally, to themselves, and to people they know. By early 1987 a third of the American population thought it very likely that AIDS would spread beyond the groups presently known to be at high risk, and a third are very concerned for themselves.

What is known by scientists about AIDS transmission has evidently been rapidly passed along to the public, presumably by mass communication media, and within two years of the public identification of AIDS each of the known means of disease transmission was known by more than 90% of the adult population. Less reassuring, however, is that misinformation may have also increased or, at a minimum, remained at undesirable levels. About a third of the population believes that AIDS is transmitted by donating blood, and there are similar levels of misinformation about the transmission of AIDS through drinking glasses, sneezing, and food handling.

Misinformation about transmitting the AIDS virus is readily translated into inappropriate precautions to prevent the disease. One third of the adult population would avoid places where homosexuals might go, and about one fourth might unwisely refuse surgery for which blood transfusions might be required. It is further discomforting to find nearly one in five who might take precautions at work, although these precautions are unspecified.

On the other hand, the fewer than 10% of the population who report that they have changed their lifestyles because of the AIDS epidemic may be responding appropriately. We are uncertain from these data if they are, in fact, at increased risk. Their relatively small numbers and the changes they report, however, suggest that this may be the case. When asked about the changes, nearly all refer to fewer sex partners or greater care in the selection of new partners, and half report increased use of condoms. Inquiry was not made about intravenous drug use in the national studies reported here.

These survey results suggest that one approach to what the public should know about AIDS is the conveying of different messages for different target populations. There may be one set of messages for groups at increased risk, for example. In the case of the homosexual community in San Francisco, campaigns promoting "safe sex" appear to have significantly altered behavior among this group, although it may be too soon to measure the im-

pact on the transmission of AIDS.[1] It would be disingenuous to assume, however, that messages aimed at those at increased risk will generally have the desired affect. To gain their attention it is first necessary that they acknowledge that they are at increased risk.

Research findings from studies of other sexually transmitted diseases have demonstrated the difficulty of achieving these ends. Among male college students it was observed that those who were most promiscuous took the fewest precautions. Moreover, the messages are not always clear guides to action. While the suggested use of condoms may be clear, the suggestion of greater selectivity of potential sex partners is not. What guidance could be given for this selection?

Selecting appropriate messages for low risk groups also has its difficulties. Correct means for avoiding AIDS appear well known by nearly everybody. It may be the incorrect messages that appear to be too well imbedded that present the greater problem. Those who would not give blood or who would refuse needed blood transfusions present potential problems to society and to themselves. In addition, survey respondents' views of proposed precautions in response to the AIDS epidemic may present other problems. A substantial proportion of the population is prepared to take tests for AIDS themselves, for example, and to require that others take tests as well. We are unprepared to provide tests to 240 million Americans, and to attempt to do so would divert AIDS resources from more serious needs. A requirement that school teachers, hospital workers, and food handlers take these tests, approved by about three fourths of those interviewed in a February 1987 survey, would raise other serious issues likely to be both discriminatory and divisive.

We would be seriously mistaken to assume that the widespread and lethal nature of AIDS should cause us to ignore what has been already learned from the study of other communicable diseases, particularly those sexually transmitted. We are aware of the potential strengths and weakness of mass communication in conveying messages about these diseases, and have available effective means to test these messages. A major difficulty, however, is that these messages are often diffuse, and efforts to get them across uncontrolled. We are surely capable of setting a policy for the control of AIDS and to translate this policy into clear messages whose impact may be evaluated. What is required is appropriate messages directed to appropriate target groups. This is far from adequate, however, in the absence of scientific methods to combat the disease through prevention and cure. Given these methods, there is little question that the public will learn of them and re-

spond. The public response to the Salk and Sabin vaccines provide assurance of that.

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